Progress Report for the Valley Fill Stability Workplan
March 1, 2000

Introduction

This report outlines the progress made to date for the Valley Fill Stability work plan. This work plan, which can be reviewed in its entirety on a separate page on this web site, is being carried out by the U.S. Department of Interior, Office of Surface Mining (OSM). The purpose of this work plan is to record instances of past fill failure; collect fill-stability indicator data from permit applications, other documents, and field observations; and perform geotechnical engineering assessments on fill designs, construction practices, and as-built embankments. For further information, you may contact Peter Michael at 412-937-2867 or pmichael@osmre.gov.

Progress to Date

Work plan development and implementation: The work plan displayed on this web site is in generic form. The team implementing this plan has tailored it to the specific circumstances and needs of each cooperating State Regulatory Agency (SRA).

Document review (task 1): The team has developed government-document (federal register notices, directives, adjudications etc.) and technical-literature reference lists and has started obtaining and reviewing the listed publications. Technical literature has thus far been obtained from: the Denver library (through the use of NERAC); contacts with the Bureau of Reclamation (BOR), the Mine Safety and Health Administration (MSHA), and the Kentucky Geological Survey; and geotechnical publications available at the Pittsburgh library.

Consultation with geotechnical expertise (task 2): Starting in November 1998, the project team consulted with the Denver, CO Geotechnical Services office of the BOR concerning the SOW and the general issue of valley-fill (especially durable-rock fill) stability. Final BOR comments and recommendations were received in February 1999. Additional input on testing and monitoring issues related to durable rock fills are being sought from MSHA, the U.S. Army Corps of Engineers (COE), the Federal Highway Administration, the U.S. Geological Survey, and State geologic surveys. The team anticipates that the performance of this task will be ongoing through the course of the study.

Consultation with State inspectors and permit reviewers (tasks 3-4): The OSM team is obtaining input from State personnel on issues related to durable rock and valley-fill construction enforcement as the opportunities present themselves during the implementation of tasks 5 through 13.

Review of permits (tasks 5-9, part of tasks 12-13): The project team developed a checklist for the review of permit applications, violation data, and inspection reports. The checklist was tested for Tennessee at the OSM, Knoxville Field Office in November 1998. Revisions were made in response to the test and to SRA comments on the draft work plan.

The production phase of the review commenced at the KFO during the week of April 5, 1999, then halted while the team concentrated its activity in other states. Work at the KFO resumed the week of November 1, 1999 and was completed during the week of November 8.

The team has worked with the SRAs towards developing sample lists of valley fills to be evaluated. The Kentucky sample list was finalized and the review began during the week of April 19, 1999. The list and other elements of the work overlap activities under the joint durable-rock-fill study between the SRA and the OSM, Lexington Field Office. The Kentucky review of up to 50 permits is nearly complete.

A draft sample list for West Virginia was developed by the OSM team and accepted by the SRA. Most of this list derives from an SRA 1994 study by the of inspectable fills; and most of the samples are "problem" fills identified by the study. Implementation of the review in WV began the week of May 10, 1999. Continuation of the work was delayed until the week of August 19 due to a change in team membership. Work recommenced in WV the week of September 6, 1999. The team completed the permit review work in that state November 19.

Using the Virginia fill inventory, the team developed a sample list for that state. The list is focused on permits that include at least one excess spoil fill greater than four million cubic yards in volume. However, since there are few large fills in Virginia, most of the samples are less than this size. The review work took place during the weeks of November 26, December 6, and December 13, 1999; and is now nearly complete.

The permit-review data from all states is being transposed into FoxPro database-management software for analysis.

Aerial reconnaissance (task 10, part of tasks 12-13): Helicopter reconnaissance of all the West Virginia sample fills occurred during the week of December 20, 1999. Thanks to a rigorous Kentucky overflight and video-documenting program, aerial reconnaissance in that state should be unnecessary. Aerial reconnaissance in Virginia had been originally set to take place the week of January 24, 2000, but has been postponed due to excessive snow cover. A subsequent period of warmer weather enabled the team to complete the helicopter survey during the week of January 21.

Funds to the amount of $45,000 have been obtained from the Army Corps of Engineers (COE) through an inter-agency agreement (IA). The IA is set to expire September 30, 2000.

In addition to the helicopter flights, the team plans to make use of aerial orthographic photography and/or contour mapping from aerial photography to record as-built configurations and locations of finished fills. The team has consulted with OSM's GIS

staff in the hope of using the fill-inventory work to this end. Using extensive aerial ortho-photographic coverage of eastern Kentucky, in the GIS staff recently has finished identifying and digitizing the boundaries of as-built valley fills, which can be compared with digitized as-designed configurations. The team does not expect that aerial ortho-photographs will be available for the West Virginia, Virginia, or Tennessee during the time period of this study.

Ground-level inspections (task 11, part of tasks 12-13): The work plan calls for 10 inspection sites each in Kentucky and West Virginia, 5 in Virginia, and 2-3 in Tennessee. However, nearly 100 % of the Kentucky samples have already been field visited as part of the durable-rock-fill study. Trial ground-level inspections at four sites in West Virginia were accomplished during the week of August 23, 1999. Additional site visits were originally scheduled for the later part of January 2000, but excessive snow cover necessitated postponement. After a period of warmer weather, the field work recommenced in the middle of February. Sites observed last summer were revisited for closer scrutiny. By February 24, the team finished half of the ground-level work in the state. Field work in West Virginia and Virginia will continue into March. The team completed the Tennessee site visits during the week on November 1, 1999.

Test drilling (task 14): Although some preliminary planning for the drilling began as early as April, 1999, this activity has been put on hold. The reasons for this delay are that (1) the value of the expected data from some of the elements of the test drilling was called into question and (2) not enough has been accomplished with the other tasks to adequately justify site selections for drilling and the tests to be applied. The team was looking into the COE providing these services via the use of their drilling contractor and lab-testing vendors. The cost estimate for this task was $300,000. How much funding will be available in FY 2000 is not yet known. Given current deadlines, there would be insufficient time left to prepare and expedite an effective test-drilling program.

Timetable for Completing the Technical Study

Complete document review and consultations	March 2000
Complete permit review	February 2000
Complete aerial surveillance	accomplished
Complete field review	March 2000
Complete test drilling (if funding is available)	if undertaken, significant time extension required
Complete draft report for EIS	March 2000